CLAIMS

1. A method of forming an electrical contact, comprising:

plating a core wire with at least one conductive coating to form an electrical contact, the electrical contact experiencing internal stresses created by the at least one conductive coating; and

induction heating the electrical contact for a predetermined period of time to at least partially relieve the internal stresses created by the at least one conductive coating.

2. The method of claim 1, further comprising, before the induction heating step, mounting a plurality of the electrical contacts on a socket configured to matably receive an electronic component and passing said socket through said induction heating step.

3. The method of claim 1, wherein said induction heating step includes heating different first and second portions of the electrical contact by different first and second amounts.

4. The method of claim 1 wherein said induction heating step includes reducing the internal stresses in the electrical contact unevenly between different first and second portions of the electrical contact such that the first portion of the electrical contact exhibits superior strength properties than the second portion, while the second portion exhibits superior stress-relaxation properties than the first portion.

5. The method of claim 1, wherein said induction heating step includes generating a time-varying magnetic field through which the electrical contact is continuously moved.

6. The method of claim 1, wherein said induction heating step includes generating a magnetic field through which the electrical contact is indexed in a stepped manner.

7. The method of claim 1, further comprising: generating time-varying magnetic fields within an annealing region extending in a substantially parallel field direction and orienting the electrical contact during said induction heating step, such that a plane containing the electrical contact is parallel to the field direction.

8. The method of claim 1, further comprising: shaping the electrical contact to include a base portion and knee portion aligned within a common contact plane; and

passing said electrical contact through a magnetic field created in the induction heating step with the contact plane being aligned parallel to a direction of the magnetic field.

9. The method of claim 1, further comprising shaping the electrical contact with a flexible portion extending forward from a base portion of the electrical contact, and orienting the electrical contact such that the flexible portion enters magnetic fields created during the induction heating step before the base portion enters the magnetic fields.

10. The method of claim 1, further comprising: orienting the electrical contact such that one end of the electrical contact is exposed to higher intensity magnetic fields created during the induction heating step and such that an opposite end of the electrical contact is exposed to weaker intensity magnetic fields.

11. The method of claim 1, further comprising, during the induction heating step, passing the electrical contact through a magnetic field having a field intensity gradient extending along a length of the electrical contact.

12. The method of claim 1, wherein the induction heating step includes creating a time-varying magnetic field having a field intensity gradient extending in a first direction, and passing said electrical contact through said magnetic field in a conveyance direction perpendicular to said first direction.

13. A method for fabricating a micro contact component, comprising:

electroplating a metallic coating on a plurality of core wires to form micro contacts;

mounting said micro contacts onto a substrate, said substrate being insensitive to magnetic fields; and

induction heating said micro contacts and substrate to anneal said micro contacts.

14. The method of claim 13, further comprising orienting said plurality of micro contacts such that a central flexible portion of each of said micro contacts first entering an induction field created during said induction heating step before a remaining portion of each of said micro contacts enters the induction field.

15. The method of claim 13, further comprising orienting said plurality of micro contacts such that a contact plane of each of each of said micro contacts is parallel to a direction of magnetic fields created during said induction heating step.

16. The method of claim 13, wherein said induction heating step includes heating different first and second portion of each of said micro contacts by different first and second amounts.

17. The method of claim 13, wherein said induction heating step includes reducing internal stresses in each of the micro contacts by a first amount in first portions of each micro contact and by a different second amount in second portions of each of said micro contacts, such that the first portion of each of the micro contacts exhibits superior strength properties than the second portion, while the second portion of each of the micro contacts exhibits superior stress relaxation properties than the first portion.

18. The method of claim 13, wherein said induction heating step includes generating a time-varying magnetic field extending in a field direction and passing said micro contacts through said magnetic field along a conveyance direction perpendicular to the field direction.

19. An apparatus for annealing an electronic component, comprising:

at least one induction coil, located proximate an annealing area, generating a magnetic field having a field portion directed through said annealing area along a field direction having a field intensity gradient across said annealing area;

an electronic component having electrical contacts mounted to a substrate, each of said electrical contacts including a coating creating internal stresses in said electrical contacts; and

a fixture configured to hold said electronic component within said annealing area proximate to said at least one induction coil for a period of time to at least partially release said internal stresses from at least a portion of each of said electrical contacts.

20. The apparatus of claim 19, wherein said electrical contacts are arranged in a two-dimensional array on said substrate.

21. The apparatus of claim 19, wherein each of said electrical contacts include a spring body having a base portion, a knee portion and an upper tip, said base portion defining a longitudinal axis extending upward from said base portion, said upper tip intersecting said longitudinal axis, said knee portion being formed integral with and joining said base portion to said upper tip, said knee portion being located laterally outward from said longitudinal axis.

22. The apparatus of claim 19, wherein said electrical contacts are held by said fixture in said annealing area such that said field portion heats different first and second portions of each of said electrical contacts by different first and second amounts, respectively.

23. The apparatus of claim 19, wherein said at least one induction coil unevenly reduces said internal stresses between first and second portions in each of said electrical contacts, such that said first portions exhibit superior strength properties and such that said second portions exhibit superior stress-relaxation properties.

24. The apparatus of claim 19, wherein said fixture continuously moves said electronic component through said annealing area at one of constant and variable rates.

25. The apparatus of claim 19, wherein said magnetic field includes magnetic field lines extending through said annealing area that are parallel to said field direction, said fixture orienting a plane of each of said electrical contacts parallel to said field direction.

26. The apparatus of claim 19, wherein magnetic field includes magnetic field lines extending through said annealing area that are parallel to said field

direction, said fixture moving said electrical contacts in a conveyance direction perpendicular to said field direction.

27. The apparatus of claim 19, wherein said at least one induction coil creates said magnetic field with a field intensity gradient traversing said annealing area, said fixture orienting said electrical contacts such that a flexing portion of each of said electrical contacts is exposed to a portion of said magnetic field having higher intensity and such that a non-flexing portion of each of said electrical contacts is exposed to a portion of said magnetic field having lower intensity.

28. The apparatus of claim 19, wherein said magnetic field includes magnetic field lines extending through said annealing area that are parallel to said field direction, said fixture moving said electrical contacts into said annealing area with a flexing portion of each of said electrical contacts entering said annealing area before a non-flexing portion of each of said electrical contacts.